



FLASH

actual lines about submarine hazards

April -June 2015 Edition

FLASH is a periodic release by the Afloat Safety Directorate of the Naval Safety Center. The information contained herein is a summary of research from selected reports of submarine hazards to assist you in your mishap prevention program. The FLASH is intended to give advance coverage of safety-related information while reducing individual reading time. This bulletin does **not**, in itself, constitute authority but will cite authoritative references when available. **It is recommended that this newsletter be made available to all hands.**



HAZMAT IS NEVER ON THE BERTHING BILL

FLASH

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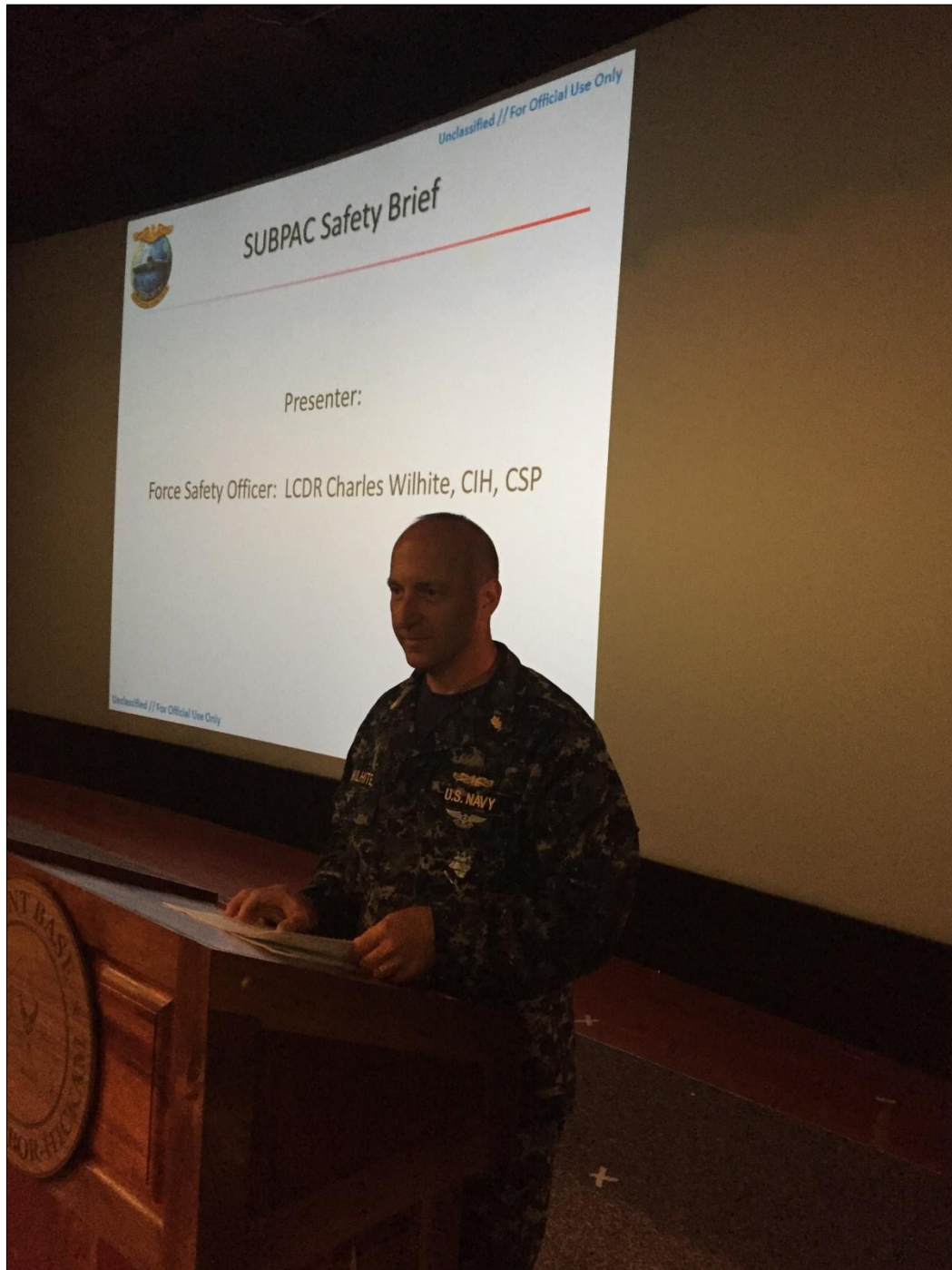
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COMSUBPAC Safety Officer LCDR Charles “Chuck” Wilhite was the guest speaker at the NAVSAFECEN Regional Safety Seminar at Sharkey Theater in Pearl Harbor, HI on 5 June 2015.



From the Submarine Safety Division Head

LT John Oravitz

“The Afloat Operational Safety Assessment (AOSA) is Underway”

The AOSA has replaced the “Submarine Safety Assessment,” which replaced the “Submarine Safety Survey” that most of you were familiar with. The initial change from survey to assessment was very minor; however, the change to an AOSA is complex and very different and I believe it is here to stay. You need the gouge, so read on ... Essentially, we utilize our published checklists as a tool to gather ORM data and to gather data from ship’s force (SF) personnel performing MRCs or evolutions that are actually in the checklist. The following example is, verbatim, from one of our most recent reports in the new format:

Machinery Room Eyewash Station Evaluation: All hazards were not identified prior to evaluation. Controls were not instituted or enforced. NAVSAFECEN noted the eyewash station water supply was partially secured and could not function properly if used in an emergency. There is no other eyewash station forward. ACT: AE103 Procedure Not Followed Correctly. HFAC: SV001 – Failure to Enforce Existing Rules. HAZARD: Damage to eyesight, RAC: 2.

We did check the condition of this eyewash station in the past and we would have marked this as a significant discrepancy. That still takes place and we are still utilizing that information in our regular data base. In addition, since a problem was found during the evaluation, more data was extracted and – internal to the Naval Safety Center only – HFACS information is added and then a RAC is assigned. Typically, a significant discrepancy will RAC out as a 1 or 2 and items not on the checklist that are evaluated as a RAC 1 or 2 will be required to be in the ship’s POA&M for significant discrepancies that is due to the ISIC 30 days after our completion message.

In addition to that, we are observing evolutions independent of our AOSA that were already planned for that day. I don’t think we have ever been to a submarine and there wasn’t some form of a competing priority, so this is easier than you think. To date, we have done four AOSAs and we have seen a ship mooring (evaluated line handling, general top-side safety, installation of MBT vent covers, etc.) we have seen a weapons load, and various other evolutions. Other examples from recent AOSAs are:

Weapons Handling Evolution: The weapons handling team lead briefed that all personnel had the responsibility to stop the evolution if an unsafe condition was observed and briefed lessons learned, with an emphasis on past events that



led to damage of weapons handling equipment and continuously emphasized, "... slow is safe." Supervisor effectiveness was well above average and there was continuous monitoring of the evolution with at least one weapons department supervisor and one quality assurance safety officer on station at all times. All required personal protective equipment (PPE) was utilized and NO false urgency was observed – slow was safe. The debrief included all personnel involved in the evolution, recorded all applicable lessons learned, and specifically addressed several moments when an over-instruction (O/I) watch-stander intervened to mitigate an under-instruction (U/I) watch-stander's actions. This disseminates lessons learned to all personnel present. It is noted that these "near misses" were discussed freely amongst the weapons handling team and there was no recommendation to convene a critique to determine root cause analysis and/or determine human factors involved with standard O/I and U/I interactions.

Raise and Rotate Radar: Controlled evolution conducted to test maintenance performed by shipyard personnel. All required SF and shipyard personnel required for the evolution were present at the brief, the ORM assessment was thorough and several mitigation processes were discussed and implemented; tripwires were discussed with all hands; and lessons learned from previous mishaps were discussed. There was a good working relationship between SF and shipyard personnel resulting in an incident free evolution. Safety was an integral part of every phase of the evolution. NAVSAFECEN personnel did not participate in the debrief.

So, there you have it. The AOSA is coming to a submarine near you soon. In short, submarines are doing things safely and according to some form of a procedure, so it is business as usual for you. This is still in a "beta testing period" and – now that we have a new report format – we will provide the ship with a preliminary report during the out-brief. Yes, this is taking longer, exacerbated by the fact that we will be down three chiefs. We have already reached out to our next boat to ask for a little more time and I wouldn't be surprised if the AOSA became a two day event in the future.



Mishap Reporting

LT Mike Lopez

Since the Naval Safety Center started publishing the Quarterly Analysis Report, WESS reports have become increasingly important in providing trending analysis to the rest of the fleet. Whereas, entering data in WESS can be challenging, these reports are paramount in determining root causes and disseminating information that can minimize the potential for reoccurrence. We all know the safety officer has a full plate, but a well thought out and detailed report, primarily the narrative, pays dividends.

So what kind of narrative details are we talking about? We're talking about those high value details that might not be readily apparent, but help identify the underlying root causes. Was there a sense of urgency, real or perceived, by the Sailor to get the job done? Was there a piece of deficient gear that contributed to the mishap? Was this deficiency previously identified by someone else, but not resolved? Basically, what were the external factors that influenced the outcome? There are going to be reports of Sailors running and slipping or tripping over something they just did not see; basic situational awareness causes. However, reports not falling into that category paint a better picture with a few more questions asked and concisely documented in the report narrative.

For example, a Sailor was tasked with changing out starters and got shocked. Upon inspection, it was noted that the starter was misaligned. The safety officer, and the rest of the command, focuses on the fact that the Sailor did not properly secure power to the light fixture or use proper PPE and other NSTM requirements if power couldn't be secured. While all are true, one item remains overlooked ... the misaligned starter. Consider the other Sailor who installed the starter. What factors influenced him or her not to notice? Was the Sailor rushing to get it done to go on liberty, was it a training issue, or was the Sailor so overtasked, he or she was focused on the 13 other jobs before he or she could get some sleep? These few questions change the situation from one individual not following procedure to multiple individuals and highlights other factors that are not immediately apparent. This process of stepping back and looking at each piece will help the safety officer better analyze his command's safety climate and take appropriate action.

Last, if new data are found after a report has been submitted, doesn't mean it can't be captured. Most users know WESS reports have to be submitted within 30 days from the mishap date. What some users do not realize is they have the ability to modify the report even after the 30-day-submission deadline. So if new information comes to light after submission, you can still update the report to include the pertinent data; any changes are then forwarded just like the original report. Additionally, reports are tied to the command UIC, the safety officer can pull previous mishaps for reference and trend analysis. So, if a report needs changing, change it; you are only helping yourself and your successors.



Mishap Analysis

Human Error – The “Why” of Mishaps/Incidents

EMC (SS) Belk

It has been said that human error comes in many shapes and forms. Most often we hear it specifically used to refer to mistakes made by equipment operators and maintenance personnel. As a consequence people customarily refer to such incidents as operator error.

Statistics compiled by the Naval Safety Center and other safety organizations show that mishaps attributed to human error account for about 9 out of every 10 mishaps. This means they could be readily avoided and the majority of people who lose their lives or are injured through mishaps could be saved. Before these improvements can begin to be realized, a first and necessary step is the complete understanding of why such errors are committed.

Any supervisor will agree there are reasons why people make errors and act unsafely. Too often, however, the wrong kinds of reasons are cited. Conclusions about the circumstances of a mishap such as “used poor judgment,” “lacked foresight,” or simply “screwed up” are often quoted but are rarely meaningful. They contribute nothing to the process of understanding how the mishap occurred. This understanding is basic to any safety program. Without the necessary knowledge of the root causes from investigating incidents, corrective actions will be ineffective since the foundation they are built on will be structurally faulty. Answers to the “why” of human error are necessarily complex and intertwined with one another, just as the behavior they attempt to determine. Questions to be answered range from those concerning the physical condition/health of the individual to the appropriateness of the person’s skills for the task they were assigned. Look for opportunities to have safety conversations that reinforce desired safe work behaviors, rather than waiting for a violation or incident investigation. The mediating effects of such important factors as fatigue, experience, motivation, morale, attitudes and emotional stresses must also be considered as well as the organizational influences and supervision. The answers to the question of “why” can be found by analyzing these parameters.



MMC (SS) Alkire

[illegible]

When you perform any drill where you have to wear an EAB, the mask should be cleaned and sanitized IAW the MRC. This may take a few extra minutes while re-stowing damage control equipment, but it will ensure that the next person will have a clean EAB with a flash hood and gloves that are in usable condition. If you just wipe out an EAB with the solution and put it back in the bag with the face mask still wet, dirt and lint will settle in and make it dirty. EABs should be dried out with a wiping cloth after it has been sanitized with the solution. Taking good care of damage control gear is everyone's responsibility on a submarine, and EABs are something that everyone on board uses. These are just a couple of the most frequent discrepancies I find. More attention should be paid to the maintenance of the equipment that will save your life in a casualty and bring the ship home.



ELECTRICAL

ETC (SS) Kingsley

Recent surveys have discovered several boats that do not have the A&I installed in Navigation Lighting Panel N-1. This A&I replaces the breakers with new, solid-plastic breakers, provides insulator screws and bushings for the breaker-interlock bars and replaces the front-cover shock hazard warning plate. Units requiring this A&I should coordinate with their 3MC to schedule installation of N-1 A&I SSN N3542/ TRID T0181/ SSN V0051.

DECK

FTC (SS) Macon

Paragraph D1002a of OPNAVINST 5100.19E, tells us, “Keep complete topside safety lifelines and stanchions rigged at all times while in port except when mooring another submarine alongside.” Of course, there are circumstances that may prevent the use of complete lifelines. In this instance, the use of temporary lines is allowed. Be sensible in your judgment of rigging these temporary lines, and always keep the duty officer informed of the situation. Remember, any time that you are outside the lifelines you are required to have a personal floatation device on, just in case you slip and fall in the water.

I have observed a positive trend in maintaining the safety equipment that you have onboard. Your aggressive search to identify the hazards and get them corrected is a testament of your dedication to your fellow Sailors and their safety. Keep doing all of the great things that you do every day to stay safe. They matter to me, your shipmates and the submarine force.



NAVOSH

HMC (SS) Thomas

EYEWASH STATIONS



Many emergency eyewash stations that I looked year were not operable, accessible, could not flush both eyes simultaneously or failed to deliver the required amount of water. **This is significant!**

Possible disability awaits our next Sailor who something in his/her eye(s) and is not able to flush correctly!

Familiarize yourself with the requirements for wash station in OPNAVINST 5100.19E paragraph B0508.

Make sure there are no physical obstructions (clutter, gear adrift) that would prevent you from placing your eyes over the eye wash station eye caps. Remember, a person needing to use the eye wash is going to have their eyes closed, or at least experience difficulty seeing.

Eye and face wash units must be installed/available, in good condition, and near chemical hazards (acid/alkaline) such as battery wells, O₂ generators, CO₂ scrubbers, sample sinks and refrigerant plants. Submarines are authorized to have emergency eyewash bottles in nucleonics and secondary sample sink in lieu of plumbed eye wash stations and may install additional eye wash bottle stations when desired. Eye and face wash stations must be capable of flushing the eyes with potable water at a minimum flow rate of 0.4 gallons per minute for 15 continuous minutes.

Eye wash stations and personal eyewash bottle locations must be distinctly marked with highly visible signs. (NSN 9905-01-345-4521)

If the eyewash facility is not available near the battery well hatch, two plastic squirt-type bottles (32 oz capacity each) must be placed in the vicinity of the hatch. This would also include situations where potable water is secured or the eyewash station is not operable.



Naval Safety Center Submarine Division Scheduled 4th QTR FY15 Assessment Plans

Commands that have scheduled their afloat operational safety assessments:

USS RHODE ISLAND (SSBN 740)
USS JIMMY CARTER (SSN 23)
USS CALIFORNIA (SSN 781)
USS NEW HAMPSHIRE (SSN 778)
USS MINNESOTA (SSN 783)

The afloat operational safety assessments for the following commands are due during the 1st QTR FY16:

USS FLORIDA (SSGN 728)
USS NEVADA (SSBN 733)
USS MICHIGAN (SSGN 727)
USS HARTFORD (SSN 768)
USS HELENA (SSN 725)
USS BOISE (SSN 764)

Note: Safety assessment scheduling requires a request message sent to the Naval Safety Center from the ship or ISIC. You can find additional assessment information, request message template, and survey checklists at www.public.navy.mil/comnavsafecen/. For additional questions, please call the submarine division at 757-444-3520 ext. 7838.



Advisories

<u>Effective COMNAVSAFECEN Submarine Safety Advisories</u>		
2010		
6-10	081904Z Dec 10	ASBESTOS REMOVAL PROTECTION
2011		
2-11	041532Z Mar 11	HEAT STRESS METER CLARIFICATION
3-11	071634Z Mar 11	HEAT STRESS SURVEY CLARIFICATION
5-11	021648Z May 11	REPORTABLE MISHAP CLARIFICATION AND REPORTING
9-11	181607Z Nov 11	AFLOAT FALL PROTECTION
2012		
3-12	231505Z Aug 12	REPORTING AFLOAT MISHAPS
4-12	291342Z Aug 12	REPLACEMENT OF OPNAVINST 5100.28, HMUG, WITH NSTM 670
2013		
4-13	295572 Aug 13	HEAT STRESS METER CLARIFICATION
2014		
2-14	101655Z Feb 14	NAVAL SAFETY SUPERVISOR COURSE REQUIREMENT CHANGE
4-14	151837Z APR 14	ELECTRICAL SAFETY DURING PMS
1-15	061446Z JAN 15	EFFECTIVE COMNAVSAFECEN AFLOAT SAFETY ADVISORIES FOR SURFACE SHIPS AND SUBMARINES
2-15	301542Z JAN 2015	SHOCK HAZARD FOR IET MODEL 1864-1644 AND 1864-9700 MEGOHMMETERS IN USN INVENTORY
2-15	191853Z MAY 15	FOLLOW-UP ON COMNAVSAFECEN AFLOAT SAFETY ADVISORY 2-15, SHOCK HAZARD FOR IET MODEL 1864-1644 AND 1864-9700 MEGOHMMETERS IN USN INVENTORY



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